The three-month shortened statutory period for reply is April 29, 2002. Therefore, this response is timely filed.

Applicant respectfully request, pursuant to 37 C.F.R. §§ 1.56, 1.97, and 1.98, that the art listed on the attached PTO-1449 form be considered and cited in the examination of the above-identified patent application. A copy of the cited art is enclosed for the convenience of the Examiner. Furthermore, pursuant to 37 C.F.R. §§ 1.97 (g) and (h), no representation is made that these references are material to the patentability of the present application. As this Information Disclosure Statement is filed after the first office action, but before the mailing of the final office action, the required fee is included in this response.

AMENDMENTS

In the Claims

Please cancel claims 1-4.

Please enter the following amended claims, pursuant to 37 C.F.R. § 1.121(c). Also included is a marked-up version of the prior pending claims showing the amendments made thereto.

5. **(AMENDED)** A method to reduce the absorption of ultraviolet radiation by the skin of a mammal, the method comprising:

providing a formulation comprising a nucleic acid, the nucleic acid having one or more R-group substitutions; and

applying said formulation to the skin of a mammal to reduce the absorption of ultraviolet radiation by the skin of said mammal.

9. **(AMENDED)** The method of claim 5, wherein applying said formulation to said mammal results in a reduction in the amount of ultraviolet radiation absorbed by the skin of said mammal.

10. **(AMENDED)** The method of claim 5, wherein applying said formulation to said mammal results in at least about a 90% reduction in the amount of ultraviolet radiation absorbed by the skin of said mammal.

11. **(AMENDED)** The method of claim 5, wherein applying said formulation results in at least about a 95% reduction in the amount of ultraviolet radiation absorbed by the skin of said mammal.

A2

12. **(AMENDED)** The method of claim 5, wherein applying said formulation results in at least about a 99% reduction in the amount of ultraviolet radiation absorbed by the skin of said mammal.

13. **(AMENDED)** The method of claim 5, wherein the ultraviolet radiation absorbed by the skin of the mammal is less than a minimum erythemal dose for the mammal after a one hour exposure to the ultraviolet radiation.

14. **(AMENDED)** The method of claim 5, wherein the ultraviolet radiation absorbed by the skin of the mammal is less than a minimum erythemal dose for the mammal after a four hour exposure to the ultraviolet radiation.

15. **(AMENDED)** The method of claim 5, wherein the ultraviolet radiation absorbed by the skin of the mammal is less than a minimum erythemal dose for the mammal after an eight hour exposure to the ultraviolet radiation.

18. **(AMENDED)** A method to reduce the occurrence of skin cancer on a mammal, the method comprising:

providing a formulation comprising a nucleic acid, the nucleic acid having one or more R-group substitutions; and

applying said formulation to the skin of a mammal to reduce the occurrence of skin cancer on said mammal.

21. **(AMENDED)** The method of claim 18, wherein applying said formulation to said mammal reduces the occurrence of skin cancer on said mammal.

22. **(AMENDED)** The method of claim 18, wherein applying said formulation to said mammal results in at least about a 50% reduction in the occurrence of skin cancer in said mammal.

23. **(AMENDED)** The method of claim 18, wherein applying said formulation to said mammal results in at least about a 75% reduction in the occurrence of skin cancer in said mammal.

24. **(AMENDED)** The method of claim 18, wherein applying said formulation to said mammal results in at least about a 90% reduction in the occurrence of skin cancer in said mammal.

27. **(AMENDED)** A method to reduce the sunburning of a mammal, the method comprising:

providing a formulation comprising a nucleic acid, the nucleic acid having one or more R-group substitutions; and

applying said formulation to the skin of a mammal to reduce sunburning of said mammal.

30. **(AMENDED)** The method of claim 27, wherein applying said formulation to said mammal results in a reduction in the sunburning of said mammal.

A6

31. **(AMENDED)** The method of claim 27, wherein applying said formulation to said mammal results in a reduction of at least about 50% of the sunburning of said mammal.

Please add the following new claims 34-52:

34. **(NEW)** The method of claim 5, wherein the R-group is a methyl group.

35. **(NEW)** The method of claim 5, wherein the nucleic acid is modified by ethylation, cross linking, ultraviolet induced cross-linking, or the formation of thymidine dimers.

36. **(NEW)** The method of claim 5, wherein the nucleic acid is less than 100 base pairs.

A7 CONT.

37. **(NEW)** the method of claim 5, wherein the nucleic acid is in a cholerestic liquid phase, a lyotropic liquid crystal phase, or a precholesteric phase.

38. **(NEW)** The method of claim 5, wherein the nucleic acid is single stranded, double stranded, or triple stranded.

39. **(NEW)** The method of claim 5, wherein the formulation further comprises a compound selected from the group consisting of apurinic acids, xanthines, purines, and uric acids.

40. **(NEW)** The method of claim 5, wherein the formulation further comprises a compound selected from the group consisting of water, alcohols, water-soluble alcohols, dimethyl sulfa oxide, antifungal agents, antibacterial agents, buffers, perfumes, dyes, aloe, and sorbitols.

41. **(NEW)** The method of claim 5, wherein the formulation further comprises a compound selected from the group consisting of phenylalanine, tryptophan, tyrosine, keratin, albumin, collagen, elastin, riboflavin, and retinoic acid.

42. **(NEW)** The method of claim 40, wherein the buffer is phosphate, HEPES, or TRIS.

43. **(NEW)** The method of claim 18, wherein the R-group is a methyl group.

44. **(NEW)** The method of claim 27, wherein the R-group is a methyl group.

45. **(NEW)** A method to reduce the absorption of ultraviolet radiation by the skin of a mammal, the method comprising:

providing a formulation comprising a compound selected from the group consisting of purines, pyrimidines, adenines, guanines, thymidines, cytosines, uracils, nucleotides, and nucleoside triphosphates, the compound having one or more R-group substitutions; and

applying the formulation to the skin of a mammal to reduce the absorption of ultraviolet radiation by the skin of said mammal.

46. **(NEW)** The method of claim 45, wherein the R-group is a methyl group.

47. **(NEW)** A method to reduce the absorption of ultraviolet radiation by the skin of a mammal, the method comprising:

providing a formulation comprising a nucleic acid, the nucleic acid having a molecular weight greater than 5000 base pairs; and

applying the formulation to the skin of a mammal to reduce the absorption of ultraviolet radiation by the skin of said mammal.

48. **(NEW)** A method to reduce the absorption of ultraviolet radiation by the skin of a mammal, the method comprising:

providing a formulation comprising a nucleic acid, wherein the nucleic acid is modified by ethylation, cross linking, ultraviolet induced cross-linking, or the formation of thymidine dimers; and

applying the formulation to the skin of a mammal to reduce the absorption of ultraviolet radiation by the skin of said mammal.

49. **(NEW)** A method to reduce the absorption of ultraviolet radiation by the skin of a mammal, the method comprising:

providing a formulation comprising an effective amount of a nucleic acid to block 100% the ultraviolet radiation; and

applying the formulation to the skin of a mammal to completely block absorption of ultraviolet radiation by the skin of said mammal.

50. **(NEW)** A method to reduce the sunburning and enhance suntanning of a mammal, the method comprising:

providing a formulation comprising a nucleic acid, the nucleic acid having one or more R-group substitutions; and

applying the formulation to the skin of a mammal to reduce the absorption of ultraviolet radiation by the skin of said mammal wherein sunburning of the skin of the mammal is reduced and suntanning of the skin of the mammal is enhanced.

A7 CONT.

51. **(NEW)** The method of claim 49, wherein the R-group is a methyl group.

52. **(NEW)** A method of treating a skin condition exacerbated by ultraviolet radiation, the method comprising:

providing a formulation comprising a nucleic acid; and

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applying the formulation to the skin of a mammal to treat a skin condition selected from the group consisting of facial-oral herpes simplex, recurrent herpes labialis, cold sores, Lentigo solar, Cutis Rhomboidalis Nuchae, Favre-Racouchot disease, Solar Purpura, solar hypersensitivity, Batema's Senile Purpura, Venous Lake, stellate scars, Chronic actinic dermatitis, xeroderma pigmentosum, solar urticaria, chronic discoid lupus erthematosus, photoaging, and pellagra.